REMARKS

Applicant respectfully requests further examination and reconsideration in view of the above amendments. Claims 1-10 remain pending in the case. Claims 1-10 are rejected. Claim 1 is amended herein. New Claims 23-25 are added. No new matter has been added.

CLAIM REJECTIONS - 35 U.S.C. § 112, second paragraph

Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements. Specifically, Examiner asserts that Claim 1 omits the elements of angular extensions from the X-lead frame and a source pad. Applicant respectfully submits that such elements are not essential and that Claim 1 is not incomplete for omitting essential elements.

Applicant has amended Claim 1 herein to recite the limitation "wherein said semiconductor die is disposed between and held in place by said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame." Applicant respectfully asserts that Claim 1 as amended clearly recites that the semiconductor die is held in place by the mounting surface and by the X-lead frame. Therefore, Applicant respectfully submits that Claim 1 overcomes the rejection under 35 U.S.C. § 112, second paragraph.

Claims 1-10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, Examiner rejects Claim 1 as being indefinite because Examiner asserts that the claim does not clearly define how the die would be held in position and how the die would be disposed between the mounting surface and the X-lead frame.

Applicant respectfully submits that it is well-established that an inventor may act as his or her own lexicographer. "The dictionary does not always keep abreast of the inventor. It cannot. Things are not made for the sake of words but words for things. To overcome this lag, patent law allows the inventor to be his own lexicographer." *Autogiro Co. of America v. United States*, 384 F.2d 391, 397, 155 USPQ 697, 702 (Ct. Cl. 1967).

Applicant respectfully submits that the claimed term of "bond" refers to permanently bonding two elements. For example, bonding refers to fastening two elements (e.g., see page 2, lines 4-6) or ultrasonically bonding two elements (e.g., see page 2, lines 12-15). As described in the specification, "[t]he X-lead frame is thus a structure providing electrical coupling between the drain region of the JFET die and an external lead in the absence of any bonding to the JFET die" (emphasis added, page 7, line 22, through page 8, line 2). In particular, Applicant respectfully asserts that one of skill in the art at the time of the invention would understand the

term "bond" to refer to fastening two elements together based on a reading of the present specification.

Applicant has amended Claim 1 herein to recite the limitation "wherein said semiconductor die is disposed between and held in place by said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame." Applicant respectfully asserts that Claim 1 as amended clearly recites that the semiconductor die is disposed between and held in place by the mounting surface and by the X-lead frame. Therefore, Applicant respectfully submits that Claim 1 overcomes the rejection under 35 U.S.C. § 112, second paragraph. Accordingly, Applicant respectfully submits that Claims 2-10 also overcome the rejection under 35 U.S.C. § 112, second paragraph, as these claims depend on Claim 1.

CLAIM REJECTIONS - 35 U.S.C. § 103(a) – Claims 1 and 7-10

Claims 1 and 7-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over EU Patent Application Publication No. 370734 by Dunaway et al., hereinafter referred to as the "Dunaway" reference, in view of the Applicant Admitted Prior Art, hereinafter referred to as the "AAPA." Applicant has reviewed the cited references and respectfully submits that the present invention as recited in Claims 1 and 7-10 is patentable over the combination of Dunaway in view of the AAPA for the following rationale.

Applicant respectfully directs the Examiner to independent Claim 1 that recites that an embodiment of the present invention is directed to (emphasis added):

> A system mounting a semiconductor die within a package comprising:
> a mounting surface;
> an X-lead frame coupled to said mounting surface; and
> said semiconductor die, wherein said semiconductor die is disposed between and held in place by said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame.

Claims 7-10 that depend from independent Claim 1 provide further recitations of the features of the present invention.

Dunaway and the claimed invention are very different. Specifically, Applicant respectfully asserts that Dunaway teaches a semiconductor chip package that is bonded to a semiconductor chip. Applicant understands Dunaway to teach a semiconductor chip package including a bonding system for selectively connecting conductive elements of the package to pads of a semiconductor chip (Abstract). In particular, Dunaway teaches that the conductive elements include preformed solder bumps that are bonded to the pads of the chip (col. 7, lines 24-30).

Applicant understands Dunaway to teach that the preformed solder bumps are reflowed for bonding the leadframe conductive elements with the chip

interface pads (col. 9, lines 4-6 and 12-19). With reference to Figure 7B of Dunaway, solderable conductive elements 70 of semiconductor wafer 72 are aligned with patterned solder bumps 16 on transfer surface 22. The patterned solder bumps 16 are heated and reflowed into wetted contact with conductive elements 70 (col. 11, lines 14-22). Specifically, solder bumps 16 are bonded to conductive elements 70.

In contrast, embodiments of the claimed invention are directed towards a system mounting a semiconductor die within a package including "wherein said semiconductor die is disposed between said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame," as claimed (emphasis added).

As described above, it is well established that an inventor can act as his or her own lexicographer. Applicant respectfully submits that the claimed term of "bond" refers to permanently bonding two elements. For example, bonding refers to fastening two elements (e.g., see page 2, lines 4-6) or ultrasonically bonding two elements (e.g., see page 2, lines 12-15). As described in the specification, "[t]he X-lead frame is thus a structure providing electrical coupling between the drain region of the JFET die and an external lead in the absence of any bonding to the JFET die" (emphasis added, page 7, line 22, through page 8, line 2). In particular, Applicant respectfully asserts that one of skill in the art at the time of the invention

would understand the term "bond" to refer to fastening two elements together based on a reading of the present specification.

Applicant respectfully asserts that Dunaway in particular does not teach, disclose, or suggest "wherein said semiconductor die is disposed between said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame," as claimed. In contrast, Dunaway discloses a semiconductor chip package including a bonding system for reflowing and bonding conductive elements of the package to pads of a semiconductor chip. By teaching a system that bonds conductive elements of the package to pads of the semiconductor chip, Dunaway teaches away from the limitation "without bonding to said mounting surface and without bonding to said X-lead frame" of the claimed invention.

Furthermore, Applicant respectfully asserts that the combination of Dunaway and the AAPA fails to teach or suggest the claimed embodiments because the AAPA does not overcome the shortcomings of Dunaway. The AAPA, alone or in combination with Dunaway, does not show or suggest a system mounting a semiconductor die within a package including "wherein said semiconductor die is disposed between said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame," as claimed (emphasis added).

Applicant respectfully asserts that nowhere does the combination of Dunaway in view of the AAPA teach, disclose or suggest the claimed embodiments of the present invention as recited in independent Claim 1, that this claim overcomes the rejection under 35 U.S.C. § 103(a), and is in a condition for allowance. Therefore, Applicant respectfully submits that the combination of Dunaway in view of the AAPA also does not teach, disclose or suggest the additional claimed features of the present invention as recited in Claims 7-10 that depend from independent Claim 1. Applicant respectfully submits that Claims 7-10 also overcome the rejection under 35 U.S.C. § 103(a) as these claims are dependent on allowable base claims.

CLAIM REJECTIONS - 35 U.S.C. § 103(a) – Claim 2

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Dunaway in view of the AAPA, further in view of United States Patent No. 5,293,058 by Tsividis, hereinafter referred to as the "Tsividis" reference. Claim 2 depends from independent Claim 1. Applicant has reviewed the cited references and respectfully submits that the present invention as recited in Claim 2 is patentable over the combination of Dunaway in view of the AAPA, further in view of Tsividis for the following rationale.

As described above, Applicant respectfully asserts that the combination of Dunaway in view of the AAPA, does not show or suggest a system mounting a semiconductor die within a package including "wherein said semiconductor die is

disposed between said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame," as claimed (emphasis added). In contrast, Dunaway teaches a semiconductor chip package whereby the semiconductor chip package is bonded to a semiconductor chip. By teaching a system that bonds conductive elements of the package to pads of the semiconductor chip, Dunaway teaches away from the limitation "without bonding to said mounting surface and without bonding to said X-lead frame" of the claimed invention.

Furthermore, Applicant respectfully asserts that the combination of Dunaway in view of the AAPA, further in view of Tsividis, fails to teach or suggest the claimed embodiments because Tsividis does not overcome the shortcomings of Dunaway in view of the AAPA. Applicant understands Tsividis to teach a linear voltage-controlled resistance element. Tsividis, alone or in combination with Dunaway in view of the AAPA, does not show or suggest a system mounting a semiconductor die within a package including "wherein said semiconductor die is disposed between said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame," as claimed (emphasis added).

Applicant respectfully asserts that nowhere does the combination of Dunaway in view of the AAPA, further in view of Tsividis teach, disclose or suggest the claimed embodiments of the present invention as recited in

independent Claim 1, that this claim overcomes the rejection under 35 U.S.C. § 103(a), and is in a condition for allowance. Therefore, Applicant respectfully submits that the combination of Dunaway in view of the AAPA, further in view of Tsividis also does not teach, disclose or suggest the additional claimed features of the present invention as recited in Claim 2 that depends from independent Claim 1. Applicant respectfully submits that Claim 2 also overcomes the rejection under 35 U.S.C. § 103(a) as this claim is dependent on allowable base claims.

CLAIM REJECTIONS - 35 U.S.C. § 103(a) – Claims 1-10

Claims 1-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,040,626 by Cheah et al., hereinafter referred to as the "Cheah" reference, in view of United States Patent No. 6,809,408 by Yu et al., hereinafter referred to as the "Yu" reference. Applicant has reviewed the cited references and respectfully submits that the present invention as recited in Claims 1-10 is patentable over the combination of Cheah in view of Yu for the following rationale.

Cheah and the claimed invention are very different. Applicant understands Cheah to teach a semiconductor package where the semiconductor die is bonded to a plate portion (Abstract).

With reference to Figure 6 of Cheah, a curable conductive material 46 is disposed between the lower surface of the plate portion 30 and the metalized region 18 of semiconductor die 16 such that plate 30 is firmly coupled to metalized region 18 (col. 3, lines 59-63; and col. 4, lines 30-50). Moreover, with reference to Figure 5 of Cheah, metalized region 19 defining a gate of die 16 is electrically coupled to terminal 12b via wire bond 20 (col. 4, lines 15-22). In particular, metalized regions 18 and 19 are bonded to plate 30 and terminal 12b, respectively, via a curable conductive material, such as solderable metal.

In contrast, embodiments of the claimed invention are directed towards a system mounting a semiconductor die within a package including "wherein said semiconductor die is disposed between said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame," as claimed (emphasis added).

As described above, it is well established that an inventor can act as his or her own lexicographer. Applicant respectfully submits that the claimed term of "bond" refers to permanently bonding two elements. For example, bonding refers to fastening two elements (e.g., see page 2, lines 4-6) or ultrasonically bonding two elements (e.g., see page 2, lines 12-15). As described in the specification, "[t]he X-lead frame is thus a structure providing electrical coupling between the drain region of the JFET die and an external lead in the absence of any bonding to the JFET die" (emphasis added, page 7, line 22, through page 8, line 2). In particular,

Applicant respectfully asserts that one of skill in the art at the time of the invention would understand the term "bond" to refer to fastening two elements together based on a reading of the present specification.

Applicant respectfully asserts that Cheah in particular does not teach, disclose, or suggest "wherein said semiconductor die is disposed between said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame," as claimed. In contrast, Cheah discloses a semiconductor package where the semiconductor die is bonded to electrical connectors. By teaching a system that bonds electrical connectors of the package to the semiconductor chip, Cheah teaches away from the limitation "without bonding to said mounting surface and without bonding to said X-lead frame" of the claimed invention.

Furthermore, Applicant respectfully asserts that the combination of Cheah and Yu fails to teach or suggest the claimed embodiments because Yu does not overcome the shortcomings of Cheah. Applicant understands Yu to teach a semiconductor package with a die pad having a recessed portion. In particular, Yu teaches that a chip is bonded to a die pad. With reference to Figure 2C of Yu a die bonding process is performed, wherein chip 11 is bonded to die pad 100 using adhesive 14. Moreover, Figure 2D of Yu teaches a wire bonding process for bonding chip 11 to lead frame 10 using gold wires 12.

Yu, alone or in combination with Cheah, does not show or suggest a system mounting a semiconductor die within a package including "wherein said semiconductor die is disposed between said mounting surface and said X-lead frame without bonding to said mounting surface and without bonding to said X-lead frame," as claimed (emphasis added). Moreover, by teaching a system that bonds a die to a chip, Yu teaches away from the limitation "without bonding to said mounting surface and without bonding to said X-lead frame" of the claimed invention.

Applicant respectfully asserts that nowhere does the combination of Cheah in view of Yu teach, disclose or suggest the claimed embodiments of the present invention as recited in independent Claim 1, that this claim overcomes the rejection under 35 U.S.C. § 103(a), and is in a condition for allowance. Therefore, Applicant respectfully submits that the combination of Cheah in view of Yu also does not teach, disclose or suggest the additional claimed features of the present invention as recited in Claims 2-10 that depend from independent Claim 1. Applicant respectfully submits that Claims 2-10 also overcome the rejection under 35 U.S.C. § 103(a) as these claims are dependent on allowable base claims.

CONCLUSION

In light of the above remarks, Applicant respectfully requests reconsideration of the rejected claims. Based on the arguments presented

above, Applicant respectfully asserts that Claims 1-10 overcome the rejections of record and, therefore, Applicant respectfully solicits allowance of these Claims.

The Examiner is invited to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,
WAGNER, MURABITO & HAO L.L.P.

Dated: 20 April, 2006

Matthew J. Blecher
Registration No. 46,558

Two North Market Street
Third Floor
San Jose, CA 95113
(408) 938-9060